

**REMARKS**

Claims 1-13 are pending in this application. By this Amendment, claims 7 and 8 are amended and claims 11-13 are added. Reconsideration in view of the above amendments and following remarks is respectfully requested.

Applicants gratefully acknowledge that the Office Action indicates that claims 5 and 9 contain allowable subject matter.

The Office Action objects to the drawings. By this Amendment, the drawings are amended responsive to the Examiner's objection. Specifically, the label "2C" is replaced by "2c" on Fig. 8, and the label "20" is replaced by "4" on Fig. 10 as the designated feature corresponds to the stem plate. Regarding the objection to Fig. 6, Applicants assert that 5B represents the vessel (as supported in the specification on page 17, lines 21-22). As such, the label 2(5B) is appropriate since it represents the metal side tube 2 of the vessel 5B, similarly to Figs. 2 and 4, where the metal side tube is label 2(5) and 2(5A) to represent the metal side tube of vessel 5 and vessel 5A respectively. Accordingly, Applicants respectfully request that the objection to the drawings be withdrawn.

The Office Action objects to the specification. By this Amendment, the specification is amended responsive to the Examiner's objection. Specifically, "tubs" is replaced by "tubes" on page 25, line 4. Applicants respectfully request that the objection to the specification be withdrawn.

The Office Action objects to claim 8 because of informalities. By this Amendment, claim 8 is amended responsive to the Examiner's objection. Applicants' respectfully request that the objection to claim 8 be withdrawn.

Claims 1-10 are rejected under 35 U.S.C. §112, 2<sup>nd</sup> paragraph. Applicants respectfully traverses this rejection.

Specifically, Applicants assert that, although it is one of the advantages of this invention, independent claims 1, 4 and 10 do not recite the feature of saving space. Accordingly, there is no need to further recite a geometric characteristic of the metal side tube such as "shaped substantially like an angular cylinder" to further emphasize that feature. While it would be preferable to shape a metal side tube to be substantially like an angular cylinder according to this invention, it is not essential to do so. For example, the dead space can be reduced even if the shape of the metal side tube is not an angular cylinder. Also, the shape of the metal side tube is not restricted to the angular cylinder in order to remove the flange. Furthermore, other means of saving space are disclosed in the specification (e.g., p. 24, line 20-p. 25, line 7).

The Office Action rejects claim 7 under 35 U.S.C. §112, 2<sup>nd</sup> paragraph because there is insufficient antecedent basis in claim 7. Applicants submit that the amendment to claim 7 obviates the grounds for this rejection.

As such, Applicants respectfully request that the rejection of claims 1-10 under 35 U.S.C. §112, 2<sup>nd</sup> paragraph, be withdrawn.


The Office Action rejects claims 1-4 and 6-8 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6 or 7 of U.S. Patent No. 6,472,664. A Terminal Disclaimer is filed herewith to obviate this rejection. Accordingly, withdrawal of the rejection is respectfully requested.

Finally, added claims 11-13 depend on claims 1, 4 and 10 respectively, and are supported by, for example, the drawings in Figs. 6, 8 and 10 and in the specification on page 12, lines 5-6. Applicants assert that for at least their dependency on allowable base claims, claims 11-13 define patentable subject matter.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-13 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

  
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Attachment:  
Terminal Disclaimer

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